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Submitted electronically: mgal461@ecy.wa.gov

AWB Comments on Ecology's Proposed PBT Rule (October 19, 2005)

Dear Mr. Gallagher,

The Association of Washington Business provides the following comments on the Washington Department of Ecology's proposed Persistent Bioaccumulative Toxins Rule, Chapter 173-333 WAC. AWB commented on two previous versions of the proposed rule and we appreciate Ecology's incorporation of a number of our suggested changes to those drafts.

These comments explain and support the attached AWB "mark-up" containing changes to the proposed rule language that we request be incorporated into the final draft. In addition, AWB supports comments submitted to Ecology by The Boeing Company, the National Council for Air and Stream Improvement, Northwest Pulp & Paper Association, the Weyerhaeuser Company, the Bromine Science and Environmental Forum, the American Chemistry Council, the Chlorine Chemistry Council, the Alkylphenols & Ethoxylates Research Council, the Chlorinated Paraffins Council, and the North American Metals Council.

WAC 173-333-100 Introduction. PBTs may pose a threat to human health, but not necessarily. This is especially true if their sources, releases and exposure pathways are managed, reduced or when appropriate and feasible, phased out. AWB's suggested changes to this section reflect more accurately this reality and the stated purpose of the PBT rule.

WAC 173-333-200 Definitions. The definitions section is intended to help define and clarify terms within the PBT rule and should be limited only to the rule to ensure the definitions do not conflict with other state laws and regulations.

All of the PBT Advisory Committee members agree that that the rule must be based on "credible scientific information". The definitions of "carcinogen, "developmental or reproductive toxicant"

and "neurotoxicant" conflict with this science-based approach by using the term "suspected". The first sentence in each of these definitions should therefore be deleted.

In addition to evaluating uses and releases of PBT chemicals, a chemical action plan should also determine and evaluate exposure pathways to help ensure that recommended actions in the CAP are best directed. A CAP should include specific recommendations to manage and where feasible, reduce or phase-out PBT uses and releases. This, along with the agreed upon goal of the rule to "reduce risk to human health and the environment" were common points of agreement during the stakeholder advisory process. Ecology's proposed language in the current draft is inconsistent with these agreements by using the word "protect", and may inappropriately facilitate a departure from a science-based rule.

AWB appreciates Ecology's improvement from the previous version of the proposed rule in defining the term "feasible". The added language in AWB's mark-up should be included to ensure feasible actions are "viable, workable and practicable".

WAC 173-333-300 What is the purpose of the PBT list? Consistent with purpose of the rule and the possible actions to be considered in a CAP, the list identifies chemicals that may require further action. Chemicals are placed on the list if they meet defined P, B and T criteria without regard to their presence or risk in Washington. It is therefore premature to assume any PBT on the list requires further action. To presuppose otherwise dilutes the purpose of the screening and criteria identification process outlined in WAC 173-333-320 and 330. It is also an incorrect assumption to presume that a chemical is a potential threat to human health and the environment. and in need of further regulatory action based solely on the fact that the chemical qualifies as a "PBT.

The department would be wise to recognize the inherent performance qualities related to "persistence", including an increase in the stability of that chemical, which not only allows that chemical to be used in less quantity and toxicity, but also retains its effectiveness over the course of time. In the case of a fire retardant for example, persistence is a valuable quality.

AWB members remain concerned that the PBT rule could be used by Ecology staff as the sole basis for additional monitoring requirements and requests the modification in the mark-up to remedy this concern.

WAC 173-333-310 What chemicals or chemical groups are included on the PBT list? AWB supports comments submitted by the North American Metals Council, the Bromine Science and Environmental Forum, the National Council for Air and Stream Improvement, the Alkylphenols & Ethoxylates Research Council, The Boeing Company, the Chlorinated Paraffins Council and other organizations requesting that a number of chemicals be removed from the proposed list. It is apparent from the comments and supporting scientific information submitted by these organizations that chemicals such as Decabromodiphenyl Ether, Tetrabromobisphenol A, Hexabromocyclododecane, n-hexyl phthalate, di-isodecyl phthalate, nonylphenol, short chain chlorinated paraffins and metals should be removed from the list.

Preferably, metals should be removed from the PBT list all together until after the EPA concludes its metals assessment framework. AWB supports comments made by NAMC on this subject. If Ecology determines it is necessary to mention metals in the PBT rule, then AWB has suggested "footnote" language in our mark-up that could be used to explain the current status of metals, and why they are not being listed as PBTs at this time. We believe this footnote is consistent with the agencies 2002 letter to the NAMC, stating that the department will be consistent with EPA.

WAC 173-333-320 What criteria will ecology use to identify and add chemicals or chemical groups to the PBT list? AWB supports comments submitted by NCASI and Weyerhaeuser Company regarding chemical groups. Ecology should base its decision whether or not to list chemicals on the mean or weighted value of credible scientific information and only if an individual chemical meets the criteria for "P", "B" and "T". There is no apparent reason to include "chemical groups" in the rule.

AWB believes that Ecology has proposed PBT criteria that are overly conservative and inconsistent with established internationally recognized criteria for PBTs. Comments submitted by ACC/CCC, NCASI and BSEF provide rationale and documentation for the department to consider on this subject.

Regarding degradation products, AWB has submitted clarifying language in this section that states that a "parent" chemical will not be listed unless it meets the PBT criteria defined in the rule. CAPs addressing degradation products that are PBTs, may however, consider a non-PBT parent. The term "degradation products" should be inserted in place of "derivative chemicals".

The integrity of the PBT rule is dependant on the evaluation of credible scientific information. The weight, or mean value of this information must be used in making decision on whether a chemical meets PBT criteria. Comments submitted by NCASI describe this weighted value approach and AWB has provided specific language in our mark-up of this section of the rule.

WAC 173-333-400 What is a chemical action plan? Consistent with earlier comments regarding implementing a practical and realistic PBT rule, recommended actions in CAPs must be feasible, include an evaluation of exposure pathways and reduce threats to human health and the environment.

WAC 173-333-410 What evaluation factors and processes will ecology use to select PBTs for chemical action plan preparation? The relative ranking of each PBT should be based on risk to Washington residents. Opportunities for reductions must be feasible and have, or likely to have a measurable net benefit to human health and the environment. CAPs should not be developed if the likely net benefit to human health and the environment does not justify necessary further actions, or there are no feasible opportunities for reduction.

WAC 173-333-420 What are the contents of a CAP? Consistent with earlier comments regarding the integrity of the PBT rule and the weight of credible scientific information being used, the term "suspected" should be deleted from the rule identifying sources. When assessing impacts on human health and the environment, the "potential for exposure" should be included.

In order for policy options to remain consistent with other sections of the rule, actions should be "feasible" and the term "elimination" should be replaced with "phasing-out". Performance measures need to include an assessment of costs to implement the CAP over time and a determination made as to whether the goals and purpose of CAPs are being met.

Overall, Ecology should be commended for its efforts throughout the development of the PBT rule. We appreciate the department's consideration and incorporation of the above comments and changes in the attached mark-up.

Sincerely,

Grant Nelson
Governmental Affairs Director

Chapter 173-333 WAC

PERSISTENT BIOACCUMULATIVE TOXINS

PART I
GENERAL PROVISIONS

ASSOCIATION OF WASHINGTON BUSINESS MARK-UP

NEW SECTION

WAC 173-333-100 Introduction. Persistent, bioaccumulative toxins (PBTs) are chemicals that may pose a unique threat to human health and the environment in Washington state. They remain in the environment for long periods of time, ~~are~~ can be hazardous to the health of humans and wildlife, can build up in the food chain, and can be transported long distances and readily move between air, land and water media.

Because of the unique threat that these PBTs may pose, special attention is necessary to identify actions that will reduce or ~~and~~ eliminate threats to human health and the environment. While ecology addresses PBTs through existing regulatory and nonregulatory programs, there remains a need for multimedia, cross-program measures that will reduce or ~~and~~ phase-out releases and uses of PBTs over time.

The goal of this chapter is to establish a process to manage, and where feasible, reduce or ~~and~~ phase-out PBT uses, releases and exposures in Washington. Ecology recognizes that many factors will influence whether and when this goal can be attained and that those factors will often vary depending on the PBT and the uses of the PBT. These factors include environmental and human health benefits, economic and social costs, technical feasibility, availability of safer substitutes, and consistency with other regulatory requirements. This chapter establishes a process that ecology will use to evaluate and identify actions that should be taken for particular PBTs. This process is designed to enhance actions being taken under other environmental laws and regulations.

NEW SECTION

WAC 173-333-110 What is the purpose of this chapter? The purpose of this chapter is to:

(1) Establish criteria ecology will use to identify persistent bioaccumulative toxins that pose human health or environmental threats in Washington state;

(2) Establish a list of persistent bioaccumulative toxins;

(3) Establish procedures ecology will use to review and periodically update the list;

(4) Establish criteria for selecting persistent bioaccumulative toxins for which ecology will prepare chemical action plans;

(5) Define the scope and content of chemical action plans

and establish the process ecology will use to prepare those plans; and

(6) Define the processes ecology will use to coordinate the implementation of this chapter with the department of health and other agencies.

NEW SECTION

WAC 173-333-120 Applicability. (1) This chapter applies to the department of ecology (ecology). This chapter does not impose new requirements on persons using or releasing PBTs, and it does not create new authorities nor does it constrain existing authorities for ecology.

(2) This chapter provides for public involvement opportunities to allow interested persons to participate in the ecology processes for identifying PBTs and developing recommendations on measures to address uses and releases of PBTs.

NEW SECTION

WAC 173-333-130 Exemptions to the PBT list. Any pesticide with a currently valid registration that has been issued by the Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. 136 et seq., or any fertilizer regulated under the Washington Fertilizer Act, chapter 15.54 RCW, will not be included on the persistent bioaccumulative toxin list established under this chapter.

NEW SECTION

WAC 173-333-140 Administrative principles. (1) **Scientific information.** Ecology will base decisions on PBTs on sound public policy and credible scientific information. However, ecology believes that lack of full scientific consensus should not be used as a justification for delaying reasonable measures to prevent harm to human health or the environment.

(2) **Public involvement.** Ecology will provide opportunities

for public involvement during the decision-making processes for identifying PBTs and preparing a CAP.

(3) **Clear documentation.** Ecology will provide clear and understandable descriptions and rationale for decisions implementing this chapter.

(4) **Predictability.** Ecology will implement this chapter in ways that allow stakeholders, interest groups, and the public to plan their participation in decision-making processes and future responses to recommendations that result from those processes.

(5) **Coordination.** Ecology will coordinate with federal and state agencies, local governments, tribes, and other interested parties in the development and implementation of CAPs and when revising the PBT list.

(6) **Rule amendments.** When amending any portion of this rule, Ecology will follow the requirements of the Administrative Procedure Act (APA), chapter 34.05 RCW.

PART II
DEFINITIONS

NEW SECTION

The following definitions apply under this rule.

WAC 173-333-200 Definitions. **"Administrative Procedure Act"** or **"APA"** means the Washington Administrative Procedure Act, chapter 34.05 RCW.

"Bioaccumulation" means the process by which substances increase in concentration in living organisms as they take in contaminated air, water, soil, sediment or food because the substances are very slowly metabolized or excreted.

"Bioaccumulation factor" or **"BAF"** means the ratio of the concentration of a chemical in an organism to the concentration of the chemical in the surrounding environment. The BAF is a measure of the extent to which the organism accumulates the chemical as a result of uptake through ingestion as well as contact from contaminated media, such as water.

"Bioconcentration factor" or **"BCF"** means the ratio of the concentration of a chemical in an organism to the concentration of the chemical in the surrounding environment. The BCF is a measure of the extent of chemical partitioning between an organism and the surrounding environment.

"Carcinogen" ~~means a chemical or chemical group that is known or suspected to increase the probability of developing cancer.~~ For purposes of implementing this chapter, the term carcinogen applies to substances that have been identified as "carcinogenic to humans" or "likely to be carcinogenic to humans" by the Environmental Protection Agency, as a Group 1, 2A or 2B carcinogen by the International Agency for Research on Cancer or as a "known to be a human carcinogen" or "reasonably anticipated to be a human carcinogen" by the National Toxicology Program.

"Chemical" means a naturally occurring element, mixture, or group of organic and inorganic compounds that is produced by or used in a chemical process.

"Chemical action plan" or **"CAP"** means a plan that identifies, characterizes and evaluates uses and releases and exposure pathways of a specific PBT or a group of PBTs and recommends actions to manage and where feasible, reduce or phase-out such uses and releases ~~protect human health or the environment~~.

"Chemical group" means a grouping of chemicals which share a common chemical structure.

"Credible scientific information" means information that is based on a theory or technique that is generally accepted~~able~~ in the relevant scientific community or has been collected or derived using standard or generally accepted methods and protocols and appropriate quality assurance and control procedures.

"Cross-media transfer of chemicals" means the movement of a chemical from one medium, such as air, water, soil, or sediment, to another.

"Degradation" means the processes by which organic chemicals are transformed into derivative chemicals and ultimately broken down.

"Developmental or reproductive toxicant" ~~means a chemical or chemical group that is known or suspected to cause adverse effects on development or reproduction.~~ For purposes of implementing this chapter, the term developmental or reproductive toxicant applies to chemicals or chemical groups identified as posing developmental or reproductive hazards by the National Toxicology Program or chemicals or chemical groups with sufficient evidence of a developmental or reproductive hazard in humans or experimental animals consistent with the United States Environmental Protection Agency's Guidelines for Reproductive Toxicity Risk Assessment and Guidelines for Developmental Toxicity Risk Assessment as set forth in 61 FR 56274 et seq. and 56 FR 63798 et seq., respectively.

"Ecology" means the department of ecology.

"Environment" means any plant, animal, natural resource, surface water (including underlying sediments), ground water,

drinking water supply, land surface (including tidelands and shorelands) or subsurface strata, or ambient air.

"Environmental half-life" means the time required for the concentration of a chemical to diminish to half its original value. The environmental half-life of a chemical is a measure of a chemical's persistence in the environment.

"Feasible" means viable, workable and practicable. ~~r~~Reasonably capable of being accomplished or brought about or capable of being utilized or dealt with successfully.

"High-exposure populations" means groups of people that are at greater risk because they have a higher potential for exposure than the general population.

"Log-octanol water partition coefficient" or **"Log K_{ow}"** means the ratio of a chemical's concentration in the octanol phase to its concentration in the aqueous phase of a two-phase octanol/water system as expressed in a logarithmic format.

"Media" or **"medium"** means a component of the environment (air, water, soil or sediment) in which a contaminant is measured and an organism lives its life, and from which an organism can accumulate contaminants.

"Neurotoxicant" ~~means a chemical or chemical group that is known or suspected to cause adverse changes in the structure or function of the central and/or peripheral nervous system.~~ For purposes of implementing this chapter, the term neurotoxicant applies to chemicals or chemical groups with sufficient evidence of a neurotoxic hazard in humans or experimental animals consistent with the United States Environmental Protection Agency's Guidelines for Neurotoxicity Risk Assessment as set forth in 63 FR 26926 et seq.

"No observed effect concentration" or **"NOEC"** means the highest concentration of a chemical evaluated in an aquatic toxicity test that does not cause a statistically significant difference in effects compared with controls.

"Persistent bioaccumulative toxin" or **"PBT"** means a chemical or chemical group that meets or exceeds the criteria for persistence, bioaccumulation and toxicity criteria established in WAC 173-33-320.

"Persistence" means the tendency of a chemical to remain in the environment without transformation or breakdown into another chemical form. It refers to the length of time a chemical is expected to reside in the environment and be available for exposure.

"Reference dose" means a numerical estimate of a daily exposure to the human population, including sensitive subgroups such as children, that is likely to be without harmful effects during a lifetime.

"Sensitive population group" means groups of people that exhibit a different or enhanced response to a chemical than most people exposed to a similar level of the chemical because of

genetic makeup, age, nutritional status or exposure to other toxic substances.

"Toxicity" means the degree to which a substance or mixture of substances can harm humans, plants or wildlife.

PART III
THE PBT LIST AND CRITERIA AND PROCEDURES FOR REVISING THE LIST

NEW SECTION

WAC 173-333-300 What is the purpose of the PBT list? (1) **Purpose.** The purpose of the PBT list is to identify toxic chemicals that may require further action because they remain ("persist") in the environment for long periods of time where they can bioaccumulate to levels that pose threats to human health and environment in Washington.

(2) **Intended uses of the PBT list.** Ecology will use the PBT list in the following ways:

(a) **Chemical action plans.** To select chemicals for chemical action plan development.

(b) **Ambient monitoring.** To help guide decisions on the design and implementation of ecology programs for characterizing chemical concentrations in the ambient environment.

(c) **Biomonitoring.** To encourage and inform the department of health regarding their efforts to monitor chemicals in human tissue.

(d) **Public awareness.** To promote greater public awareness on the problems associated with PBT chemicals, the uses and sources of individual PBTs and steps that individuals and organizations can take to reduce PBT uses, releases and exposure.

(e) **Voluntary measures.** To help identify opportunities for government agencies, businesses and individuals to implement voluntary measures for reducing ~~and~~ or phasing out PBT uses and releases.

(3) **Relationship to actions addressing chemical uses and releases.** Ecology has determined that the chemicals on the PBT list may pose a potential threat to human health and the environment in Washington.

(a) Ecology's decision to include a particular chemical on the PBT list does not represent a decision that ~~all~~ uses and releases of that chemical should be reduced and phased-out.

(b) Ecology ~~does not intend to~~will not use the PBT list as the sole basis for establishing discharge monitoring requirements that are not required under current permits. Ecology will evaluate and, if necessary ~~appropriate~~, prepare recommendations for additional monitoring requirements when preparing chemical action plans (WAC 173-333-420 and 173-333-430).

NEW SECTION

WAC 173-333-310 What chemicals or chemical groups are included on the PBT list? (1) **Purpose.** This section identifies the chemicals and chemical groups that ecology has determined meet the criteria specified in WAC 173-333-320.

(2) **PBT list.** Ecology has determined that the following chemicals or chemical groups meet the criteria specified in WAC 173-333-320.

Chemicals listed in alphabetical order	CAS Number
Aldrin	309-00-2
~~Cadmium~~	~~7440-43-9~~
Chlordane	57-74-9
Chlordecone (Kepone)	3734-48-3
Dichlorodiphenyltrichloroethane (DDT)	50-29-3
Dieldrin	60-57-1
Endrin	72-20-8
Heptachlor/Heptachlor epoxide	76-44-8/1024-57-3
Hexabromobiphenyl	36355-01-8
~~Hexabromocyclododecane~~	~~25637-99-4~~
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
~~Lead~~	~~7439-92-1~~
~~Mercury~~	~~7439-97-6~~
Mirex	2385-85-5
~~Nonylphenol/4-nonylphenol (branched)~~	~~25154-52-3/84852-15-3~~

Pentachlorobenzene	608-93-5
~~Short-chain chlorinated paraffins~~	~~85535-84-8~~
~~Tetrabromobisphenol A~~	~~79-94-7~~
Tetrachlorobenzene, 1,2,4,5-	95-94-3
Toxaphene	8001-35-2
Chemical categories listed in alphabetical order	
Perfluorooctane sulfonates (PFOS)	
Acid	1763-32-1
Ammonium salt	29081-56-9
Diethanolamine salt	70225-14-8
Lithium salt	29457-72-5
Potassium salt	2795-39-3
~~**Phthalate esters**~~	
~~Di-isodecyl phthalate (DIDP)~~	~~68515-49-1 and 26761-40-0~~
~~Di-n-hexyl phthalate (DnHP)~~	~~84-75-3~~
Polycyclic aromatic hydrocarbons (PAHs)	
3-Methyl chlolanthrene	56-49-5
7H-Dibenzo(c,g)carazole	194-59-2
Benzo(a)phenanthrene (Chrysene)	218-01-9
Benzo(b)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Benzo(j)fluoranthene	205-82-3
Benzo(k)fluoranthene	207-08-9
Benzo(r,s,t)pentaphene	189-55-9
Dibenzo(a,e)pyrene	192-65-4
Dibenzo(a,h)pyrene	189-64-4
Dibenzo(a,h)acridine	226-36-8
Dibenzo(a,h)anthracene	53-70-3
Dibenzo(a,j)acridine	224-42-0
Fluoranthene	206-44-0
Indeno(1,2,3-cd)pyrene	193-39-5

Perylene	198-55-0
Polybrominated dibenzodioxins and furans	
2,3,7,8-tetrabromodibenzo-p-dioxin	50585-41-6
2,3,7,8-tetrabromodibenzofuran	67733-57-7
Polybrominated diphenyl ethers	
Pentabromodiphenyl ether	32534-81-9
Octabromodiphenyl ether	32536-52-0
~~Decabromodiphenyl ether~~	~~13654-09-6~~
Polychlorinated biphenyls (PCBs)	
2,3',4,4',5 Pentachlorobiphenyl	31508-00-6
2,3,4,4',5 Pentachlorobiphenyl	74472-37-0
2,3,3',4,4' Pentachlorobiphenyl	32598-14-4
3,3',4,4',5,5' Hexachlorobiphenyl	32774-16-6
2,3',4,4',5,5' Hexachlorobiphenyl	52663-72-6
2,3,3',4,4',5' Hexachlorobiphenyl	69782-90-7
2,3,3',4,4',5 Hexachlorobiphenyl	38380-08-4
2,3,3',4,4',5,5' Heptachlorobiphenyl	39365-31-9
Polychlorinated dibenzo-p-dioxins	
2,3,7,8 Tetrachlorodibenzo-p-dioxin	1746-01-6
1,2,3,7,8 Pentachlorodibenzo-p-dioxin	40321-76-4
1,2,3,4,7,8 Hexachlorodibenzo-p-dioxin	39227-28-6
1,2,3,6,7,8 Hexachlorodibenzo-p-dioxin	576-53-8
1,2,3,7,8,9 Hexachlorodibenzo-p-dioxin	19408-74-3
1,2,3,4,6,7,8 Heptachlorodibenzo-p-dioxin	35822-46-9
1,2,3,4,6,7,8,9 Octachlorodibenzo-p-dioxin	3268-87-9
Polychlorinated dibenzofurans	
2,3,7,8 Tetrachlorodibenzofuran	51207-31-9
1,2,3,7,8 Pentachlorodibenzofuran	57117-41-6
2,3,4,7,8 Pentachlorodibenzofuran	57117-31-4

1,2,3,4,7,8 Hexachlorodibenzofuran	70648-26-9
1,2,3,6,7,8 Hexachlorodibenzofuran	57117-44-9
1,2,3,7,8,9 Hexachlorodibenzofuran	72918-21-9
2,3,4,7,8,9 Hexachlorodibenzofuran	60851-34-5
1,2,3,4,6,7,8 Heptachlorodibenzofuran	67562-39-4
1,2,3,4,7,8,9 Heptachlorodibenzofuran	55673-89-7
1,2,3,4,6,7,8,9 Octachlorodibenzofuran	39001-02-0
Polychlorinated naphthalenes	
Trichloronaphthalene	1321-65-9
Tetrachloronaphthalene	1335-88-2
Pentachloronaphthalene	1321-64-8
Hexachloronaphthalene	1335-87-1
Heptachloronaphthalene	32241-08-0

~~(3) **Lead and cadmium.** Ecology will not develop a chemical action plan for lead and cadmium until the Environmental Protection Agency concludes the development of a metals assessment framework and ecology completes its review of the bioavailability of these two substances.~~

Optional metals footnote language: Application of the Bioaccumulation criterion (a BCF >1,000) to metals has been called into question, on the ground that BAF/BCF values are not meaningful for metals; instead, the BAF/BCF varies inversely with the concentration of the metal in water. Accordingly, Ecology will not make a decision whether to include mercury, cadmium and lead or other metals on the PBT list until after the U.S. Environmental Protection Agency ("U.S. EPA") concludes the process of preparing a Metals Risk Assessment Framework. This Framework , will address the utility of using PBT criteria for evaluating the potential hazards of metals. The decision not to list metals does not mean, however, that Ecology or other state agencies will refrain from taking actions necessary to reduce risks to human health and the environment posed by the release or presence of mercury, cadmium and lead.

(34) **Revising the PBT list.** Ecology will periodically review and, as appropriate, revise the PBT list in subsection (2) of this section using the criteria and procedures in WAC 173-333-320 through 173-333-340.

NEW SECTION

WAC 173-333-320 What criteria will ecology use to identify and add chemicals or chemical groups to the PBT list? (1) **Purpose.** This section describes the criteria that ecology will use to determine whether a chemical or group of chemicals should be included on the PBT list.

(2) **Criteria for identifying PBTs.** A chemical or group of chemicals will be included on the PBT list if ecology determines it meets each of the following criteria:

(a) **Persistence.** The chemical or chemical group can persist in the environment based on credible scientific information that:

(i) The half-life of the chemical in water is greater than or equal to sixty days; or

(ii) The half-life of the chemical in soil is greater than or equal to ~~sixty~~ one hundred-eighty days; or

(iii) The half-life of the chemical in sediments is greater than or equal to ~~sixty~~ one hundred-eighty days; and

(b) **Bioaccumulation.** The chemical or chemical group has a high potential to bioaccumulate based on credible scientific information that the bioconcentration factor or bioaccumulation factor in aquatic species for the chemical is greater than 1,000 or, in the absence of such data, that the log-octanol water partition coefficient (log K_{ow}) is greater than five; and

(c) **Toxicity.** The chemical or chemical group has the potential to be toxic to humans or plants and wildlife based on credible scientific information that:

(i) The chemical (or chemical group) is a carcinogen, a developmental or reproductive toxicant or a neurotoxicant;

(ii) The chemical (or chemical group) has a reference dose or equivalent toxicity measure that is less than 0.003 mg/kg/day; or

(iii) The chemical (or chemical group) has a chronic no observed effect concentration (NOEC) or equivalent toxicity measure that is less than 0.1 mg/L or an acute no observed effect concentration (NOEC) or equivalent toxicity measure that is less than 1.0 mg/L.

(d) **Additional criteria applicable to metals.** The chemical or chemical group is a metal and ecology determines that it is likely to be present in forms that are bioavailable.

(3) **Degradation products.** Ecology will consider both the chemical and its degradation products when making decisions on whether a chemical meets the criteria in subsection (2) of this

section. If a chemical does not meet the criteria in this section for a PBT but degrades into chemicals that do meet the criteria in this section for a PBT, the parent chemical will not be listed as a PBT but will be considered in the development of a CAP for those degradation products that do meet the criteria in this section for a PBT and are on the PBT list.~~derivative chemicals~~.

(4) **Use of Credible Scientific Information.** Ecology will consider all available credible scientific information when making decisions on whether a chemical meets the criteria in subsection (2) of this section. Ecology will evaluate a chemical against numeric criterion based on a mean or median of all credible scientific information. Ecology will give greater weight to actual experimental data if a discrepancy exists between experimental data and model predictions. In determining whether a chemical qualifies as bioaccumulative, Ecology will give priority to BCFs and BAFs.

NEW SECTION

WAC 173-333-330 What criteria will ecology use to remove a PBT from the PBT list? (1) **Purpose.** This section describes the criteria and factors ecology will use to determine whether a chemical or group of chemicals should be removed from the PBT list.

(2) **Criteria for removing a chemical from the PBT list.** Ecology will remove a chemical or chemical group from the PBT list if the department determines that credible scientific information developed subsequent to the listing decision provides evidence that the chemical or chemical group does not meet the PBT criteria in WAC 173-333-320(2).

NEW SECTION

WAC 173-333-340 What process would ecology follow to revise the PBT list? (1) **Purpose.** This section describes the processes ecology will use to notify the public and amend the PBT list after making a determination that chemicals or groups of chemicals should be added or removed from the PBT list.

(2) **Reviewing and updating the PBT list.** Ecology will periodically review and update WAC 173-333-310. The frequency

of review will be determined by credible scientific information available on individual chemicals or chemical groups, rule-making petitions submitted to ecology, and available agency resources. Ecology will comply with the requirements for reviewing and responding to rule-making petitions in the Administrative Procedure Act, chapter 34.05 RCW.

(3) **Public notification.** If ecology makes a preliminary determination that a chemical should be added or removed from the PBT list, the department will prepare a technical discussion paper that summarizes the scientific information supporting the addition or removal of a chemical and notify the public through an announcement posted on the ecology web site and published in the *Washington State Register*.

(4) **Amending the PBT list.** If ecology makes a final determination that a chemical or chemical group should be added or removed from the PBT list, the department will initiate actions to amend WAC 173-333-310 through formal rule making.

PART IV
CHEMICAL ACTION PLANS (CAPs)

NEW SECTION

WAC 173-333-400 What is a chemical action plan (CAP)? A chemical action plan (CAP) is a plan that identifies, characterizes and evaluates uses, ~~and~~ releases and exposure pathways of a specific PBT or a group of PBTs and recommends feasible actions to reduce threats ~~protect~~ to human health or the environment.

NEW SECTION

WAC 173-333-410 What evaluation factors and processes will ecology use to select PBTs for chemical action plan preparation? (1) **Purpose.** Ecology will consult with the department of health to develop a multiyear schedule for the preparation of chemical action plans. The purpose of this section is to describe the evaluation factors and processes ecology will use to prepare and update the multiyear schedule.

(2) **Evaluation factors.**

(a) Ecology will consider the following factors when preparing the multiyear schedule:

(i) **Relative ranking.** The relative ranking assigned to

each PBT based on ecology's evaluation of risk to Washington residents, information on PBT characteristics, uses of the chemical in Washington, releases of the chemical in Washington, the levels of the chemical present in the Washington environment, and levels of the chemical present in Washington residents.

(ii) **Opportunities for reductions.** Whether there are feasible opportunities for reducing or phasing out uses, production or releases of the PBT in Washington that will have or are likely to have a measurable net benefit to human health or the environment. In reviewing available information, the agencies shall consider whether more than one PBT is present in particular products, generated in particular processes or released from particular sources (co-occurring chemicals).

(iii) **Multiple chemical releases and exposures.** Scientific evidence on the combined effects of exposure to one or more PBTs and other substances commonly present in the Washington environment.

(iv) **Sensitive population groups and high-exposure populations.** Scientific evidence on the susceptibility of various population groups including the timing of the exposure and the cumulative effects of multiple exposures.

(v) **Existing plans or regulatory requirements.** Whether there are existing plans or regulatory requirements that reduce and phase out uses and releases of a particular PBT or group of PBTs.

(b) Ecology will not prepare CAPs if the department determines:

(i) All uses and releases of the PBT are prohibited under other state and federal laws or regulations;

(ii) There is credible scientific information to support a conclusion that the PBT is not used, released or present in Washington; or

(iii) There are no ~~available~~ feasible opportunities for reducing or phasing out the uses, releases or exposures of the PBT beyond levels required under other federal or state laws or regulations.

(iv) The likely net benefit or risks to human and health or the environment does not justify the development of a CAP.

(3) **Preliminary schedule.** Ecology will prepare a preliminary schedule that will identify the PBTs for which CAPs will be developed for the multiyear schedule, the rationale for selecting these PBTs and a timeline for completing CAPs for these PBTs.

(4) **Public notice and comment.** Ecology will notify the public when it has prepared a preliminary schedule and provide an opportunity for public review and comment. Ecology will notify the public through an announcement published in the *Washington State Register* and posted on the ecology web site.

Ecology will also send a written announcement to interested persons and organizations. Ecology will provide sixty days, from the date the notice is published in the *Washington State Register* for the public to review and submit comments on the preliminary selection.

(5) **Final schedule.** Ecology will review all public comments on the preliminary schedule prior to preparing a final schedule. Ecology will notify the public of the final decision through an announcement published in the *Washington State Register* and posted on the ecology web site. Ecology will also provide written notification to individuals or organizations who submitted comments on the preliminary schedule.

(6) **Schedule updates.** Ecology will review and, as appropriate, update the schedule for chemical action plans at least once every three years. In making such revisions, ecology will follow the process for preparing the schedule (including an opportunity for public review and comment) specified in this section.

NEW SECTION

WAC 173-333-420 What are the contents of a CAP? (1) **Contents of the chemical action plans.** Chemical action plans will include, as appropriate, the following types of information, evaluations and recommendations:

(a) **General chemical information.** General information includes, but is not limited to, chemical name, properties, uses and manufacturers.

(b) **Production, uses and releases.** An analysis of information on the production, unintentional production, uses and disposal of the chemical. This will include estimates on the amount of each PBT used and released from all sources or activities in Washington and other man-made and naturally occurring sources that may contribute to exposures in Washington. Sources may include other chemicals or products that are known ~~or suspected~~ to degrade to the chemical included on the PBT list.

(c) **Human health and environmental impacts.** Information on the potential impacts on human health and the environment associated with the use and release of the PBT chemical. This will include consideration of available information on the levels of the PBT present in Washington's environment, potential for exposure, the likely fate and transport mechanisms, available body-burden data, toxicity effects, and the rates of diseases that have been associated with exposure to the

particular PBT.

(d) **Current management approaches.** An evaluation of the regulatory and nonregulatory approaches that influence production, uses, releases and management of each PBT.

(e) **Identification of policy options.** A list of options for managing, and where feasible, reducing ~~and~~ or ~~eliminating~~phasing-out the different uses and releases of the PBTs addressed in the CAP. The range of options for particular uses and releases will include:

(i) A no-action option;

(ii) An option that results in the ~~elimination~~ phasing-out of PBT uses and releases;

(iii) An option to manage chemicals to reduce exposure; and

(iv) Other options, including the use of available substitutes, which will enable full consideration of the opportunities and constraints for reducing particular uses, releases and exposures.

(f) **Recommendations.** Recommendations for:

(i) Reducing ~~and~~ or phasing-out uses and releases of the specific PBT or group of PBTs addressed in the CAP;

(ii) Managing products or wastes that contain the specific PBT or group of PBTs addressed in the CAP; and

(iii) Minimizing exposure to the specific PBT or group of PBTs.

The recommendations will be based on an evaluation of the following factors:

(A) Environmental and human health benefits associated with implementing the action;

(B) Economic and social impacts associated with implementing the action;

(C) Feasibility of implementing the action;

(D) Availability, cost and effectiveness of safer substitutes for uses of the PBT being addressed in the plan; and

(E) Consistency with existing federal and state regulatory requirements.

(g) **Implementation steps.** A description of the steps ecology will take to implement the CAP, including a description of:

(i) The existing resources and necessary additional budget ecology intends to use;

(ii) Potential funding sources for CAP implementation, including those that tie implementation costs to PBT sources and products;

(iii) How ecology intends to inform and educate affected persons about the CAP;

(iv) How ecology will promote and assist voluntary actions;

(v) How ecology will collect additional information needed

to evaluate the feasibility of potential actions; and

(vi) Any recommended regulatory actions and how ecology will pursue them.

(h) **Performance measures.** A description of interim milestones to assess progress and costs and the use of objectively measurable outcomes, including recommendations for environmental and human health monitoring to measure levels of the chemical(s) (in the CAP) over time and whether the goals and purpose of the CAPs are being achieved.

(i) **Other.** Other information that ecology determines is necessary to support the decision-making process.

(2) **Regulatory consistency.** When evaluating the consistency with existing federal and state regulatory requirements under subsection (1)(f)(iii)(E) of this section, ecology will:

(a) Ensure that the recommendations do not violate existing federal or state laws;

(b) Determine if the recommendations would impose more stringent performance requirements on private entities than on public entities, unless already required to do so by federal or state law, and if so, describe the justification for doing so; and

(c) Determine if the recommendations differ from federal regulations and statutes, and if so, explain why the difference is necessary and how ecology will coordinate with other federal, state, and local laws applicable to the same activity or subject matter.

(3) **Economic analyses.** In assessing economic impacts under subsection (1)(f)(iii)(B) of this section, ecology will identify costs of implementing the recommendations. This may include a qualitative and/or quantitative analysis of the probable benefits and costs of the CAP.

(4) **Safer substitutes.** When evaluating the availability of safer substitutes for PBT uses, ecology will:

(a) Determine if the recommendations include the use of safer substitutes, and if not, explain why ecology has not recommended this option.

(b) Determine if the recommendations call for additional research for uses with no safer substitutes, and if not, explain why ecology has not recommended this option.

(c) Provide for periodic reevaluation of whether substitutes are available.

NEW SECTION

WAC 173-333-430 What process will ecology use to develop CAPs? (1) **Purpose.** The purpose of this section is to identify the process ecology will use to develop CAPs.

(2) **Workplan/scoping.** Once a chemical is selected for CAP development, ecology will initially plan and scope the CAP of the selected chemical based upon available information regarding the chemical's products, uses and releases; human health exposure and ecological hazards; environmental releases, fate, and transport; environmental concentrations and available substitutes; available options for managing uses and releases; estimated costs, benefits and effectiveness of alternate management options; and any other information ecology determines is necessary to support the CAP development process. Ecology will consult with the department of health regarding all portions of the CAP related to human health exposures.

(3) **Advisory committee.** Ecology will create an external advisory committee for each CAP that ecology develops. The purpose of the advisory committee is to provide stakeholder input and expertise.

(a) The advisory committee membership will include, but not be limited to, representatives from: Large and small business sectors, community, environmental and public health advocacy groups, local governments, and public health agencies. When appropriate, representatives from the following groups will also be invited to participate: Agricultural groups, worker safety advocacy groups, and other interested parties. Federally recognized tribal governments will also be encouraged to participate. In addition, representation from other state executive agencies may be requested to provide input and to represent agency interests in the CAP development process. Outside experts (if needed) may be requested to provide technical expertise.

(b) A neutral third-party facilitator may be hired to facilitate advisory committee meetings.

(c) The advisory committee will follow a consultative process, where ecology will draft the CAP in consideration of input from advisory committee members.

(d) All advisory committee meetings will be open to the public. Ecology will notify the public of advisory committee meetings through an announcement posted on the ecology web site and written notification to interested individuals and organizations.

(4) **Information collection phase.** Ecology will collect all necessary and up-to-date information regarding the selected chemical. CAP advisory committee members will be asked to contribute, and as appropriate, review information from ecology during this phase of CAP development. The department of health will be asked to review any information related to human health.

(5) **Draft recommendations.** Ecology will develop a draft CAP for advisory committee review and comment. Ecology will review all advisory committee comments and, as appropriate, revise the draft CAP prior to distributing it for public review and comment.

(6) **Public review and comment.** Ecology will notify the public when it has developed a draft CAP and provide an opportunity for public review and comment. The public comment period for each draft CAP will be a minimum of sixty days. Ecology will notify the public through an announcement posted concurrently on the ecology web site, a notice in the *Washington State Register*, and sent to interested persons and organizations. The comment period shall start from the date the notice is published in the *Washington State Register*. During the comment period, ecology will hold a minimum of two public meetings on the draft CAP. One meeting shall be held on the western side of the state, and one meeting shall be held on the eastern side of the state. Ecology may hold additional public meetings during the public comment period if determined necessary. Ecology will provide a response to all public comments.

(7) **Final recommendations.** Ecology will review and provide responses to all public comments on the draft CAP prior to issuing the final recommendations. Ecology will notify the public of the final recommendations through an announcement that will be published in the *Washington State Register* and posted on the ecology web site. Ecology will also provide written notification to individuals or organizations who submitted comments on the draft CAP.

(8) **Coordination with other agencies.** Ecology will coordinate with other government agencies and interested parties as appropriate on the implementation of the final CAP. Ecology will consult with the department of health on public information materials addressing food safety issues.